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A Summary of Current Programs, 10/2/67  
and Preliminary Report of Progress  
for 10/1/66 to 9/30/67

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ECONOMIC AND STATISTICAL ANALYSIS DIVISION

of the

ECONOMIC RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

and related work of the

STATE AGRICULTURAL EXPERIMENT STATIONS

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This progress report is primarily a tool for use of scientists and administrators in program coordination, development and evaluation; and for use of advisory committees in program review and development of recommendations for future research programs.

The summaries of progress on USDA and cooperative research include some tentative results that have not been tested sufficiently to justify general release. Such findings, when adequately confirmed, will be released promptly through established channels. Because of this, the report is not intended for publication and should not be referred to in literature citations. Copies are distributed only to members of Department staff, advisory committee members, and others having a special interest in the development of public agricultural research programs.

This report also includes a list of publications reporting results of USDA and cooperative research issued between October 1, 1966, and September 30, 1967. Current economic and statistical research findings are also published in the Outlook and Situation Reports, Agricultural Economics Research, and The Farm Index. This progress report was compiled in the Economic and Statistical Analysis Division, Economic Research Service, U.S. Department of Agriculture, Washington, D.C.

UNITED STATES DEPARTMENT OF AGRICULTURE  
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## INTRODUCTION

The Economic and Statistical Analysis Division has the responsibility for research directed toward (1) the identification and measurement of relationships among the factors affecting the demand, supply, and price of agricultural commodities; (2) identification and measurement of broad relationships between the farm economy and the national economy; (3) measurement and analysis of farm income and income of farm population; (4) measurement and analysis of demand for and consumption of food and other farm products, and long-run projections of economic growth and demand and prices; and (5) historical research relating to major developments in farming and major changes in policies, programs, and organizations of the Department.

Development and improvement of statistical data and development of new and improved methods of statistical analysis are integral parts of this process.

This research provides the information underlying the appraisals of the current and prospective economic situation for agriculture and agricultural commodities which are the heart of outlook work. It also provides the information required for analyses of the probable effects of alternative farm programs.

Economic and statistical analysis research is reported for the period October 1, 1966, through September 30, 1967. The research effort in the Economic and Statistical Analysis Division amounts to approximately 54 professional man-years.

Following are some of the recent research accomplishments of the Economic and Statistical Analysis Division.

The study of the parity income position of commercial family farmers was completed. The report was sent to Congress and printed as Parity Returns Position of Farmers, Senate Document No. 44, 90th Congress, 1st Session. The parity returns measures developed in the study show that:

1. Farmers on the average in 1966 earned 81 percent as much as they might have expected to receive if they had rented out their land and taken a non-farm job. They received 96 percent as much as they might have expected to obtain by selling their land, investing the proceeds in common stocks and taking a job. In 1959 and 1964 the ratio of farm earnings to "parity returns" was lower than in 1966.
2. Farms with value of sales of \$20,000 or more averaged parity returns or above in 1966 under each of four general methods used for comparison.
3. Smaller farms (those with less than \$20,000 value of sales) earned less than parity returns under all methods of comparison and in all years tested.



4. Farms in the lowest income group (under \$5,000 value of sales) received only 1/3 to 2/5 of parity returns even in 1966 when net farm income was a near record.

Parity returns are the equivalent returns that the labor and capital employed in farming might get if they were employed elsewhere in the economy. Statistical measures of parity returns were developed for all farms combined, for several types of farms, and for size classes of farms as indicated by value of sales.

Two of many possible ways to calculate parity returns on capital were judged to be superior to the others. These were termed the "landlord" standard and the "stockholder" standard. Parity returns to labor are based on the relationship of income to age, education, and proportion of males in the labor force. For operators of farms with value of sales of \$20,000 or more the resulting parity wage rate is 105 percent of the average hourly earnings of manufacturing workers.

A special study, World Fiber Balance, Past, Present, and Future, was made for the National Advisory Committee on Food and Fiber under certain assumptions provided by the Committee. Analyses and projections were made for production and consumption of cotton and all fibers. Special emphasis was devoted to analyzing the competition in the developing countries between cotton and food crops for available resources.

Because of continuing rapid growth in U.S. soybean production, a study was made on the Domestic and Foreign Demand for Soybeans and Soybean Products. This was done by the University of Minnesota in collaboration with this Division, and will be published as an Experiment Station Bulletin.

A study on the Competitive Position of the Midwestern Egg Industry, made jointly with the Marketing Economics Division, was completed. This study analyzed trends in egg production and marketing in the Midwest as compared to other regions, and suggested a number of changes to make the Midwest more competitive in the egg industry.

Among the States, Texas reports that an econometric model of the cattle industry was constructed to evaluate which factors influence the producer's decision to produce, feed, or market cattle. This analysis provided separate cattle slaughter forecasting equations, and cattle price forecasting equations for each month of the year.

In Wyoming progress was made in developing and testing alternative models of the cattle-cycle generating mechanism. Prices, inventories, and production of beef were generated by a recursive system of equations; and results were tested against actual data. The goal was to predict annual levels of supplies and prices. A number of demand equations were formulated



for feeder cattle on a regional and national basis. In addition, equations were developed to estimate relationships among prices, weights, and breeds of feeder cattle sold at the Torrington livestock auction.

Louisiana reports that: (1) Farm price indexes for Louisiana were computed and published for each month, (2) several publications presenting parish data from the 1964 Census of Agriculture have been started, and (3) progress has been made in estimating farm income by parishes by years.

In Michigan progress has been made in understanding price determining mechanisms operating in agricultural markets for farm inputs and farm products. Price forecasting models are being developed to forecast and predict prices in both the long and short run. The feasibility of a futures market for red tart cherries was evaluated. Trends in the U.S. economy were projected and interpreted for their implications to agricultural markets and farm income.



## AREA NO. 1, COMMODITY SITUATION AND OUTLOOK ANALYSIS

## PROBLEM

Frequent accurate appraisals of the economic prospects for important agricultural commodities are necessary if farmers are to plan and carry out their production and marketing activities in an efficient and profitable way. The typical farmer cannot afford to collect and analyze all the statistical and economic information necessary for making sound production and marketing decisions. Such information is provided through a flow of current outlook information, the development of longer range projections of the economic prospects for the principal agricultural commodities, and analyses of the economic implications of existing and proposed programs affecting major farm commodities.

## USDA AND COOPERATIVE PROGRAM

The program includes a continuous appraisal of the current and prospective economic situation of the major crop and livestock items. These appraisals, together with developments of interest to the industry and results of special studies, are published 4 to 6 times a year in the various commodity Situation reports. Brief resumes are carried in the quarterly Demand and Price Situation and, when appropriate, in monthly issues of the Farm Index and the Agricultural Outlook Digest. In addition, comprehensive information is presented at the Annual Outlook Conference, at regional and State conferences, and at meetings with industry groups. Statistical handbooks are published periodically for livestock and a number of the field crops.

Except for a regional field office for livestock, in Denver, Colorado, which is a cooperative effort with the Federal Extension Service and State Extension Services in the Western States, all the USDA commodity situation and outlook work is carried on in Washington. The total USDA commodity situation and outlook program currently involves 19.5 scientific man-years. This is distributed among commodity groups as follows: Food grains 1.5; feed 2.0; livestock and meat 4.5 1/; dairy 2.0; poultry and eggs 1.0; fats and oils 1.5; fruits and tree nuts 1.0; vegetables and potatoes 1.5; cotton and man-made fibers 1.5; wool 1.5; tobacco 1.5.

## PROGRAM OF STATE EXPERIMENT STATIONS

For the most part the States depend heavily on the USDA for across-the-board commodity situation and outlook research. However, the State extension staff members supplement and adapt such research information to meet

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1/ 2.5 man-years in Washington and 2 man-years in Denver, Colorado.

the commodity situation of their States. The total direct research effort at State experiment stations in the situation and outlook area is approximately 10.0 scientist man-years. While not designed as outlook research, much of the research conducted by the experiment stations and reported under Area No. 2 contributes to improved understanding of price-making forces, which in turn improves market situation analysis and price forecasting.

## PROGRESS--USDA AND COOPERATIVE PROGRAMS

### A. Food Grains

For 1966-67 attention was increasingly focused on wheat by individual market class. Hard red winter wheat, the mainstay of the Food for Freedom Program, was in particularly short supply relative to past levels. Analyses were made of the possibility of substituting other classes of wheat and coarse grains. Stocks and disappearance of wheat were estimated by class, by quarters, and by States. Larger commercial export demand drew heavily on some other classes of wheat that were potentially in short supply.

With the coming of the large 1967 crop and prospects for increasing the carryover, emphasis was placed on (1) means of maintaining and stabilizing prices during harvest, (2) the most effective utilization of a crop which was more largely composed of soft wheats than at any time in recent years, and (3) means of removing the Government from the market to permit increased use of the price system to allocate supplies.

The situation reports carried (1) new and additional material for individual classes of wheat with emphasis on graphic material for presentation to regional groups, (2) explanation of the actual returns to producers including non-market payments, (3) revised statistical material resulting from the 1964 Census of Agriculture and the 1963 Census of Manufactures, and (4) expanded statistics and discussion on milled rice supply and disappearance.

### B. Feed

Changes in the feed grain situation in recent years have made it necessary to give increasing attention to the factors affecting feed grain requirements, both domestic and export, and a desirable level of feed grain carryover. The Feed Grain Program, and increased demand for feed, resulted in a reduction in the carryover from a record 85 million tons of feed grains in 1961 to about 37 million tons in 1967. The program was changed in 1967 to enable participating farmers to expand acreage and production. Alternative programs are under study for 1968. In 1966/67, prices of feed grains averaged 3 percent above a year earlier and 22 percent above the post-war low of 1960/61.



## C. Livestock and Meat

A reappraisal of the cattle cycle was made after revisions in the January 1 inventory numbers were released in February 1967. Discussions of the changes in the outlook for cattle because of the 2 percent upward revision in the number of cattle on farms were included in the March Livestock and Meat Situation. Further stress was placed on the impact of the small downturn now underway in the inventory in the August issue. The feeder cattle supply has stabilized somewhat and it is now unlikely that the level of fed cattle marketings will increase very rapidly in the next year or so.

A major section of the May issue of the Situation was focused on foreign trade in livestock and livestock products. Beef and veal ranked first among these products in value of imports in 1966, followed by wool and pork. The export value of the animal fats--tallow and greases, and lard--was the largest, followed by hides and skins, and variety meats.

## D. Dairy

In response to industry interest in dairy imports and to the need for information relating to import regulation, special studies were made of the world dairy situation, dairy policies in other countries, and U. S. imports. A monthly summary of dairy imports has been developed for dissemination by the Dairy and Poultry Market News Service. Declining demand for dairy products brought about the development of quarterly estimates of dairy product consumption. In addition, a special study was made of blended food products containing chiefly corn, soybeans, and nonfat dry milk for use in foreign food programs. Evaluation was started on Governmental participation in fluid milk pricing and of State fair trade practice regulations.

## E. Poultry and Eggs

An analysis was made of the effect of increasing production of poultry, eggs, and competing red meats on prices of poultry and eggs. In the February 1967 issue of the Poultry and Egg Situation special attention was given to the broiler situation in the European Economic Community. The April issue carried a report on the changes made by the Statistical Reporting Service to improve the chicken inventory data. The effect of revisions in data based on the 1964 Census of Agriculture was discussed.

## F. Fats and Oils

Soybeans and soybean products again were of major concern, because of their increasing importance to both the domestic and world economies. The relatively high price of soybeans last season, along with increased world supplies of competitive commodities, tended to slow down the rate of increase in utilization of U. S. soybeans. The January 1967 Fats and Oils

Situation carried an analysis about soybean oil and meal yield factors and trends in oilmeal production and use. The March issue included an article on the importance of fatty acids as a market outlook for fats and oils. Fatty acids and their many derivatives continue to be a promising market for inedible fats and oils. An analysis of glycerine production and use was carried in the June issue. In the future, most of the increase in production is expected to come from synthetic sources. In September, an article was carried on the rapid increase in sunflower seed production, particularly in the Soviet Union. Sunflower seed competes directly with soybeans as a source of oil and meal in world markets.

#### G. Fruits and Tree Nuts

Continuing emphasis was given to special presentations in the Fruit Situation of data on processed citrus and noncitrus fruits, geographic distribution of fruit and nut production, and per capita consumption. Revisions were made in per capita consumption series of individual and broad groups of fresh and processed fruit and tree nuts on the basis of the 1964 Census of Agriculture. Further refinements were made in some series, especially per capita data for pineapples and bananas. Compilation of historical data on foreign trade in both fresh and processed fruit has been started. An article in the July 1967 issue of the Fruit Situation examined the seasonal pattern of fresh fruit marketings on the basis of unload totals for 41 cities from 1964 through 1966. Total supplies were seasonally large during the summer and early fall harvest period for most deciduous crops, when supplies of citrus were small. Reduced marketings of noncitrus fruits during the winter were largely offset by increased supplies of citrus. Month-to-month fluctuations in total fruit deliveries were small.

#### H. Vegetables and Potatoes

A major report on demand and price for potatoes was published, including a review of developments in potato processing, consumption trends, and the use and impact of government programs on the production and marketing of potatoes. Another report, published by OECD in early 1967, examines trends and current status of the U.S. horticultural industry, and provides general indications for production and utilization over the next few years. A paper detailing recent market developments for horticultural commodities in North America was presented at the Fifth International Congress on Fruit and Vegetable Standardization and Marketing Methods.

Due to the interest in the marked changes occurring in the utilization and consumption of potatoes, data were developed which show per capita consumption in fresh form, and for each of the important processed potato products. Consumption of fresh tablestock has dropped a third since 1950, and now accounts for about 60 percent of the total per capita use. Consumption of frozen and dehydrated potatoes, and potato chips, has increased manyfold.

## I. Cotton and Other Fibers

Attention was given to changes that occurred in cotton production, utilization, prices, farm income, and stocks including both quantity and quality, under the first year's operation of the Agriculture Act of 1965. The Act was designed to reduce surplus cotton stocks over a 4-year period, ending August 1, 1970. However, both the 1966 and 1967 crops were reduced far below expectations by unfavorable growing and harvesting conditions. At the same time, mill consumption and exports were at high levels. Cotton stocks are likely to be down about 10 million bales in the 2 years ending August 1, 1968. Surplus stocks will be virtually eliminated, necessitating increased cotton production in 1968/69 to meet utilization needs. Emphasis was placed on the probable effect of changes in provisions of the cotton program pertaining to acreage diversion rates, and on production and quality composition of the crop.

A large part of the record cotton stocks on hand August 1, 1966 consisted of short staples, and most of this cotton was owned by the Commodity Credit Corporation. A study was prepared for the Secretary's Office on the causes of the accumulation and ways of disposing of this cotton. The probable impact of various price levels on consumption, exports, and production of the short staples was studied. This study served as a basis for determining price support differentials for the 1967 loan program.

Analyses were made for the Secretary's Office on the effects of proposed legislation, prohibiting imports of extra-long staple cotton from countries having broken diplomatic relations with the United States. Analyses were prepared also on probable effects of a proposed price-support program for extra-long staple cotton patterned after the upland cotton program.

Estimates of the raw fiber content of textile fabrics used in the military forces were refined and electronically programmed. A study for the National Advisory Commission on Food and Fiber contained projections to 1980 of world supplies and demand for cotton, wool, and man-made fibers. Attention was devoted to the competition between cotton and food crops for resources, to the effect of changes in population and income on fiber consumption, and to the competition between natural and man-made fibers.

## J. Wool and Mohair

Increasing emphasis has been placed on appraising the world supply and demand situation for wool in conjunction with the domestic wool economy. A meeting was held with other major producing and consuming countries to study methods of improving data on the world wool industry and wool's competitive position relative to other fibers. Appraisals were made of the U.S. wool tariff in view of the international negotiations on trade and tariffs. Attention was given to the effect of a possible tariff reduction and its relationship to the U.S. Wool Act program, income to



domestic producers, and consumption of wool. Duty rates would not change for wools imported in large volume, but rates of low quality wools would be reduced 50 percent in 5 equal annual installments beginning January 1, 1968. A new series of monthly deliveries of wool, cotton, and man-made fibers to the U.S. military forces was developed for the Wool Situation. This series was first published in October 1966 including data beginning with 1961.

#### K. Tobacco

A program to strengthen the competitive position of U.S. tobacco in foreign markets became effective in July 1966. An appraisal was made of the effect of this program after 10 months operation. It was concluded that the program halted the persistent uptrend in export prices of U.S. tobacco, and made a sizeable contribution to the 1966/67 increase in U.S. tobacco exports of nearly one-third from 1965/66. U.N. sanctions against Rhodesian tobacco were a factor contributing to heavy exports from the United States in the past year, but the outlook continues to be one of uncertainty as stocks continue to accumulate in Rhodesia.

The tied-untied flue-cured tobacco problem received much attention following the 1966 marketing season, and the experience of that season was studied and evaluated. Cigarette prices advanced in early June 1967 by about 5 percent at the manufacturer level (net of the Federal excise and trade discounts). At the retail level the increase amounted to 2½ to 3 percent. Despite this, the number of cigarettes consumed per person in 1967 rose to the second highest level on record.

## PUBLICATIONS--USDA AND COOPERATIVE PROGRAMS

Food Grains

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### Dairy

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Wool

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## AREA NO. 2. SUPPLY, DEMAND AND PRICE OF AGRICULTURAL COMMODITIES

### PROBLEM

Producers, processors, distributors, and consumers need information based on accurate knowledge of the interrelationships among prices, production, and consumption of farm products, and other factors. Similarly, Congress, administrators of farm programs, and analysts need such economic information to evaluate existing and alternative programs or policies in terms of their probable impact on production, consumption, and prices at both the farm and retail levels. The research program in this area provides the information for strengthening outlook and situation work.

### USDA AND COOPERATIVE PROGRAM

The program of basic research into the factors affecting prices, supply, and consumption of principal agricultural commodities is concerned with four broad areas: (1) Measurement of consumer response to price, income, and other factors; (2) measurement of producer response to price and other factors; (3) measurement of the effect of supply and demand factors on prices to farmers and to consumers; and (4) improvement of statistical techniques for measuring economic relationships in agriculture.

The USDA program of research in this area involves 9.5 scientific man-years and is located in Washington, D.C. The total effort is distributed in man-years by research areas as follows: Livestock and meats 2.0; feed grains and other feeds .5; dairy .5; fats and oils .5; vegetables and potatoes .5; cotton and other fibers 2.0; tobacco .5; fruits and tree nuts .5; food grains .5; improvement of statistical techniques 2.0.

### PROGRAM OF STATE EXPERIMENT STATIONS

Many of the States carry on supply, demand, and price analyses for the products of their State. Much of the research is commodity oriented, though some projects are of a highly mathematical and theoretical nature aimed at improving price analyses methodology. A total of about 39.4 scientific man-years is devoted directly to this area of research. A large contribution flows from much of the research reported in the marketing Economics Multiple Use Report under Area 1, Section B, entitled "Organization and Performance of Markets--Prices, Margins and Costs."

### USDA AND COOPERATIVE PROGRAMS

#### A. Food Grains

With the changed wheat situation last year, whereby prices moved well above the loan, additional attention was given to the relationship of futures

markets to cash markets. This required more intensive analysis of privately held stocks and changes in holdings by various segments of the private marketing sector of the wheat economy.

Work performed for the Secretary's Office and the Congress included an analysis of the wheat production, marketing, and processing industries and its relation to the national economy, further analysis of the factors influencing the Chicago wheat market, and a study of export payment differentials for various types of rice and their effect on commercial exports.

#### B. Feed Grains and Other Feeds

With exports becoming an increasingly more important outlet for U.S. feed grains, special analysis was conducted during 1966/67 of foreign supplies and demand and their influence on U.S. exports. In the early 1950's U.S. exports made up only about 15 percent of total farm sales; exports rose to 35 percent of the sales total in the 1965/66 season. In 1966/67, exports dropped nearly a fourth from the record 29 million tons shipped in 1965/66. A major factor was the larger production in a number of foreign countries which reduced the demand for U.S. feed grains. Although shipments of feed grains to India under the P. L. 480 Program rose sharply in the last 2 years, 85 to 90 percent of feed grain exports have been commercial sales.

Because of the importance of the relationship between livestock and feed, special analyses of livestock-feed relationships were initiated. A study was made of the relationship between livestock numbers in terms of grain-consuming animal units and the total tonnage of feed grains and other concentrates fed. The number of grain-consuming animal units was estimated on a quarterly and a semi-annual basis to improve estimates of the consumption of feed during the marketing year. The results of these studies are being prepared for publication.

Special analyses were run of the important factors influencing feed grain prices. Results of these studies were used in the outlook and situation work.

Over the past 20 years there has been an upward trend in commercial sale of hay by U.S. producers, both in tonnage and as a percentage of the crop. Basic analysis was conducted on factors associated with hay prices in important producing regions. Results of this work will be published in the Feed Situation.

#### C. Livestock and Meat

An analysis of beef production by class and grade was published. It showed the increasing importance of fed beef in total beef production. Fed cattle marketings which accounted for about 36 percent of all cattle marketings in 1946-48 rose to 66 percent of the total in 1964-66. High quality meats,

Prime, Choice and Good, over the same period rose from an average of 52 percent of total beef production to about 69 percent.

Performance of the Livestock-Feed Grain Economy was the title of an article published in the Journal of Farm Economics. There has been a trend in the past two decades toward greater stability in feed grain production and prices as well as in livestock production. However, similar trends cannot be detected with respect to livestock prices, particularly for hogs.

An analysis of regional shifts in livestock was published. The number of farms and ranches raising livestock in the past decade declined substantially, while the number of livestock, except sheep, increased. Progress continued on improving the quarterly supply model for hogs developed in 1962 for determining the number of pigs saved and slaughtered and the price of hogs. Additional factors are being considered to adapt the model to recent structural changes in the industry.

#### D. Poultry and Eggs

A report, Competitive Position of the Midwestern Egg Industry, co-authored by the Division's poultry analyst was published in February 1967. Trends in egg production and marketing in the Midwest were compared with those in other regions. The market structure and practices in the industry and changes needed to make the region more competitive were analyzed. The low density of production, and smaller feed-mill and chick-hatchery operations, result in higher costs than in areas of intensified commercial production. Many areas have more deliveries to retail stores and warehouses, bypassing wholesale receivers and distributors in terminal markets. The Midwest continues to market eggs through the more traditional, longer, and costlier marketing channels.

#### E. Dairy

Basic research was begun to provide a comprehensive analysis of the factors affecting the supply, demand and price for milk and dairy products. Preliminary results indicate that milk cow numbers are strongly influenced by the level of beef cattle prices, while yield per cow is related to time or trend and is associated with technological change. Manufacturing milk supplies appear to be more responsive to changes in returns from nondairy farm enterprises than are Grade A milk supplies. Responses, however, differ from one production region to another because of regional shifts in demand and in the competitive position of dairying relative to other farm and off-farm alternatives.

#### F. Citrus

Projections of production, prices, and utilization of oranges through 1970-71 were made. Prospective production over the next 5 years will



increase considerably, and prices will likely be depressed. Orange exports on a fresh equivalent basis by 1970-71 were assumed to be about twice the 1965-66 levels. Fresh use of oranges will likely decline further from 17 percent of total production in 1965-66 to 13 percent in 1970-71. The use of frozen concentrates was projected to increase from 62 percent of total consumption to 70 percent over the same period.

#### G. Vegetables and Potatoes

Demand and Price Analysis for Potatoes was published as Technical Bulletin No. 1380. Included in the bulletin are statistical analyses of economic relationships for each of the various seasonal potato markets, and detailed discussions of the nature of demand for potatoes, consumption and price trends, the potato processing industry, and the influence of government programs. During the period studies, consumer response varied from as elastic demand for winter and early spring potatoes to a highly inelastic demand for fall crop potatoes. Changes in income appeared to have little effect on consumption; prices of competing or substitute foods also had little influence on the consumption and price of potatoes.

A study of demand relationships for selected processed vegetables is underway, with work during the past year mainly devoted to developing appropriate series of prices and supplies.

#### H. Cotton and Other Fibers

A study, World Fiber Balances, Past, Present, and Future, was completed for the National Advisory Commission on Food and Fiber and published in July 1967 as a technical paper by the Commission. Included in the study were separate analyses, and projections to 1980, of cotton acreage, yield, and production for the world and for various regions and countries of the world. Emphasis was devoted to analyzing the competition between cotton and food crops for land and other resources, particularly in countries that are deficit producers of food crops and large producers of cotton. In India, for example, it was found that cotton acreage has not expanded in recent years and will probably decline in future years because of growing population and increased need for food crops.

Analysis and projections covered also world, regional, and individual country consumption of all fibers, and the separate fibers. Analysis included the impact of economic development and population growth on total fiber consumption. The role of price and fibers was studied as to their probable effect on the use of the individual fibers, with particular emphasis on the competition between natural and man-made fibers. It was found, for example, that large funds for research, promotion, and advertising of non-cellulosic fibers, made available by the producers of man-made fibers, have stimulated the rapid growth in use of these fibers. However, the overall competitive position of cotton and wool is expected to improve in the

future as research, promotion, and advertising are increased, and the rapid growth in use of non-cellulosic fibers is projected to slow.

In the study, Analysis of Cotton and Man-made Fiber Substitution in End-use Item Consumption in the United States, it was reported that the most significant factors affecting cotton consumption in aggregate, apparel, household, and industrial end uses were disposable personal income, population growth, and promotional expenditures of the man-made fiber industry. Cotton and man-made fibers compete for end-use markets primarily on the bases of cotton price and man-made fiber promotion. Further analysis is being made of the end-use data, with particular emphasis on projecting the demand for cotton in these uses, and of probable effect of price and quality characteristics on demand for cotton.

Further study was made of the role of price and other factors in the use of fibers in fabrics for the military, and the impact on cotton of the increasing use of fabric blends. The increase in blends has been related to short supplies of 100-percent cotton fabric and to better performances of the blends for some uses. Also, attention has been devoted to the competition between cotton and man-made fibers for non-textile uses, such as sandbags where use of man-made fibers has increased because of competitive prices, greater strength, and mildew resistance. However, cotton's competitive position may improve with lower prices this year. Cotton sandbags are generally preferred by troops because they are easier to handle.

#### I. Wool

Projections to 1980 of wool production and consumption by regions of the world were prepared at the request of the President's National Advisory Commission on Food and Fiber. Increasing incomes and larger populations were factors associated with the anticipated increase in total world wool consumption. World production is expected to parallel the rise in consumption, but the rate of increase of both production and consumption will be slower than in recent years. Wool's share of total fiber consumption probably will decline, as production and use of man-made fibers increase.

A study of trends in U.S. production of blend fabrics was printed in the October 1966 Wool Situation. Output of all blend fabrics--wool, cotton, and man-made fiber--during 1958-65 doubled, while total fabric production rose 15 percent, resulting in a continuing rise in blend's share of total. Of all blends containing wool in 1965, about 60 percent were principally wool, and 40 percent were principally man-made fibers.

#### J. Tobacco

Projections were made of supply, utilization, and grower receipts for each kind of tobacco for the next 5 years and to 1980, as part of an overall study of trends in agriculture. Continuing analysis was made of trends in

utilization of tobacco as affected by recent technological changes, and their impact on growers. Particularly intensive analysis was made of use of dark tobaccos. Cigarette consumption by U.S smokers was projected to 1970 and 1975, under certain economic assumptions and taking into account some degree of impact of the smoking and health publicity. Evaluation was made of published demand and price studies on tobacco; technical problems in leaf tobacco price analysis--retarding successful research results--were identified and appraised.

#### K. Improvements in Techniques and Reports

The electronic computer continues its important role of assisting researchers in carrying out the statistical and econometric work of the Division. Latest developments in the computer field are followed and assessed as to their possible application in the work of the Division.

A special purpose computer program has been developed for cotton and other fibers. This program summarizes data on quantities of textile products delivered to military establishments. Deliveries are reported by the Defense Department monthly. Fabric and raw fiber equivalents are computed and accumulated by varied classes and groups according to cotton, wool and the man-made fibers,

Further progress was made in sampling readership response to various situation reports. Readers of the Demand and Price Situation were surveyed during this reporting period, as reported in Area No. 4. Another survey is currently underway that covers a 50 percent sample of the mailing list for the Fats and Oils Situation.



## PUBLICATIONS--USDA

Feed Grains and Other Feeds

Clough, Malcolm, November 1966. Foreign Demand and Export Prospects. Feed Situation, pp. 30-40.

Clough, Malcolm, April 1967. Comparison of Prospective Plantings of Feed Grains with Acreages Planted. Feed Situation, pp. 21-23.

Ross, J. S., May 1967. Recent Developments and Outlook for High-Protein Feeds. Feed Situation, pp. 18-24.

Feed Section, September 1967. Feed Statistics through 1966, ERS Stat. Bul. 410, 112 pp.

Livestock and Meat

Larsen, John, February 1967. Regional Shifts in Livestock Production. Livestock and Meat Situation, pp. 23-26.

Larsen, John, May 1967. Beef Production by Class and Grade. Livestock and Meat Situation, pp. 33-36.

Simmons, W. M. and Rizek, R. L., December 1966. Performance of the Livestock Feed Grain Economy, Journal of Farm Economics, Vol. 48, No. 5, pp. 1455-1463.

Poultry and Eggs

Rogers, George B., and Bluestone, H., February 1967. Competitive Position of the Midwestern Egg Industry, MRR No. 784. ERS, USDA, Washington, D.C., 60 pp.

Dairy

Miller, Robert R., March 1967. Changes in Dairy Farm Numbers. Dairy Situation, pp. 30-36.

Miller, Robert R., May 1967. Quarterly Estimates of Dairy Product Consumption. Dairy Situation, pp. 32-35.

Miller, Robert H., September 1967. Seasonal Milk Price Variation. Dairy Situation. pp. 27-30.

Potatoes

Hee, Olman, July 1967. Demand and Price Analysis for Potatoes. Tech. Bul. No. 1380, USDA, 123 pp.

Cotton and Other Fibers

Donald, James R. and Others, July 1967. World Fiber Balances, Past, Present and Future. Technical paper published by National Advisory Commission on Food and Fiber. Cotton and Other Fiber Problems and Policies in the United States, Technical papers, Vol. 2, Washington, D.C. 80 pp.

Barlowe, Russell Graham. 1967. Analysis of Cotton and Man-made Fiber Substitution in End-Use Item Consumption in the United States. Unpublished Master's Thesis, University of Maryland.

Tobacco

Conover, Arthur G. U.S. Consumption of Cigarettes, Smoking and Chewing Products and Snuff--Cigarette Projections for 1970 and 1975. Paper presented at the 21st National Tobacco Workers Conference at Williamsburg, Virginia, January 18, 1967. The main portion of this paper was published in the March 10, 1967 issue of Tobacco, Vol. 164, No. 10, pp. 23-24, 29.

Sackrin, S. M. Some Problems in Leaf Tobacco Price Analysis. Paper presented at the 21st National Tobacco Workers Conference at Williamsburg, Virginia, January 20, 1967.

## AREA NO. 3. FARM INCOME

## PROBLEM

Timely and accurate statistical information and analyses on the farm income situation and outlook are essential to farmers, legislators, administrators, and others in developing production and marketing plans and in evaluating the needs for and operations of public programs for agriculture. Changes in the structure of commercial agriculture require the development of new methods and sources of data to maintain and improve the representativeness of farm income measures. Quantitative measures of the interrelationships between agriculture and other sectors of the economy are needed for assessing the impact of changes in the farm sector on related nonfarm sectors and the impact of changes in nonfarm sectors on farming. Centralization and maintenance of a large number of economic time series pertaining to agriculture is required to permit prompt and accurate handling of a continuous flow of a wide diversity of requests for economic data on agriculture.

## USDA AND COOPERATIVE PROGRAM

The Department has a continuing long-term program of economic and statistical research which includes the development of new methods and sources of data and the regular preparation of current estimates and projections. This work is located in Washington, D. C. The Federal program of research in this area involves 10 professional man-years. This is divided as follows: (a) Current estimates of farm income and expenditures, 4 man-years; (b) research and methods relating to farm income, 2.5 man-years; (c) analysis of the impact of alternative farm programs on agriculture and the rest of the economy, 2 man-years; (d) centralization and maintenance of economic data pertaining to agriculture, 1.5 man-years.

## PROGRAM OF STATE EXPERIMENT STATIONS

The States rely considerably upon the USDA for research into the farm income situation. Some States conduct supplementary research, especially into certain aspects of farm expenses. Farm account records also play an important role in providing considerable detail as to what is happening to farm income in certain types of farming areas and even generally. A total of 3.0 scientific man-years is devoted to this area of research.\*

## PROGRESS - USDA AND COOPERATIVE PROGRAMS

A. Current estimates of farm income and expenditures.

Realized net income of farm operators during January-June 1967 was at a

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\*Also included in Marketing Economics Division Report.

seasonally adjusted annual rate of \$14.8 billion -- about \$1.8 billion below the rate in the first half of 1966. A recent appraisal of production, marketing and price prospects for the remainder of 1967 points to a realized net farm income for the year which may be some 5 to 10 percent below the 1966 level of \$16.4 billion. The 1966 level was the second best on record, exceeded only in 1947.

Realized gross farm income in 1966 was a record high \$49.7 billion, about \$5 billion higher than in 1965. Cash receipts from farm marketings which make up almost 90 percent of realized gross farm income were estimated at \$42.3 billion in 1966, also a record high, and \$4.1 billion higher than in 1965. Direct Government payments to farmers rose sharply in 1966 to a level of \$3.3 billion compared with \$2.5 billion a year earlier.

Farm production expenses showed a much larger than usual increase last year due mainly to higher prices of production goods and services and higher overhead costs, but also to some increase in the volume of purchases. The estimated total of \$33.3 billion spent to operate the farm business was \$2.4 billion more than in 1965. However, with realized gross farm income rising faster than expenses, realized net farm income in 1966 was some \$2.5 billion higher than the \$13.9 billion total of 1965.

Farm operators' realized net income per farm reached a record high of \$5,049 in 1966 compared with \$4,109 in 1965. The rise in aggregate realized net farm income and to a lesser extent the continuing decline in farm numbers contributed to the sharp increase in average net farm income per farm last year. State estimates for 1966 show that realized net income per farm rose in all regions. Some 46 States showed an increase while 4 States were lower.

The per capita personal income of the farm population from all sources rose sharply in 1966 to a level of \$1,840; \$1,241 came from farm sources and \$599 from nonfarm sources. The per capita disposable personal income (after taxes) of the farm population in 1966 was \$1,717 compared with \$1,545 in 1965. In recent years, except for 1964, the per capita disposable personal income of the farm population has risen. It was 55 percent of the per capita disposable personal income of the nonfarm population in 1960, 62 percent in 1965, and 65 percent in 1966.

During the reporting period, work continued on systems analysis preparation for transferring a substantial part of the cash receipts estimating work to automatic data processing equipment. The most recent phase of this work has been the adaptation of the presently used 650 Program to the more efficient 360 equipment now available in the Department.

The demand for information on farm income by States accelerated during the reporting period. This required the preparation of additional statistical series showing farm income developments in each of the States and selected periods, such as 1961-1966 compared with 1957-1960, and 1966 compared with 1960.



Preliminary data from the 1964 Census of Agriculture became available during the reporting period, and were incorporated as far as possible into annual revisions of farm income for 1964-1966.

Also during the reporting period, work was done to assist members of the Planning, Evaluation, and Programming Staff, Office of the Secretary in appraising the effect of alternative assumed situations on farm income in future years.

## B. Research and methods relating to farm income.

1. Development of estimates of income of farm operator families by value of sales classes.--Distributions of number of farms, farm income and expenses, and off-farm income of farm operator families by value of sales classes (1959-65) were revised and the series extended through 1966. These data were published in the July 1967 Farm Income Situation and supersede estimates published in earlier issues. Preliminary United States summary information from the 1964 Census of Agriculture was drawn upon. Information from the 1964 Census included distributions of number of farms, value of sales, and specified production expenses by economic class of farm. Such information, for the first time, permitted an analysis of trends, using data with similar farm definitions and sales class groups between Census years 1959 and 1964.

Farms with value of sales of \$10,000 or more account for increasing percentages of total farms, cash farm income, production expenses, and net farm income. In 1966, for example, an estimated 1,037,000 of such farms accounted for \$39.7 billion in cash receipts (including government payments) out of a total of \$46.5 billion for all farms combined. In relative terms, this group comprised 32 percent of all farms, received 85 percent of cash receipts, paid 85 percent of farm production expenses, and retained 78 percent of realized net farm income. In 1959, there were an estimated 828,000 of these high production farms. In that year, they made up 20 percent of all farms, received 71 percent of cash income, paid 72 percent of production expenses, and retained 55 percent of net farm income.

In contrast, farms with value of sales of less than \$10,000 are declining in number, and also in their proportional shares of cash receipts and net income. In 1966, these farms accounted for about 68 percent of all farms, but they received only about 15 percent of cash receipts and 22 percent of net income. In 1959, they had received 29 percent of cash receipts and 45 percent of net income.

The total income position--off-farm income as well as farm income--of farm families in the different sales groups reveals important facets of the income structure within Agriculture. For example, of the average total income in 1966 for farm families in the \$20,000 and over sales group, by far the largest share came from farm sources--nearly \$9 out of every \$10 of total income. As the scale of farming operations declines the relative dependence

upon off-farm sources of income increases. In 1966, farm operator families in the less than \$2,500 sales group received over \$8 out of every \$10 of total income from off-farm sources.

## 2. Measurement and analysis of relationships between Agriculture and other segments of the economy.

Preparation of estimates of interindustry sales and purchase transactions between Agriculture and the other sectors of the U. S. economy in 1963 is underway. These estimates will be used by the Office of Business Economics in the construction of the second complete input-output transactions table for the U. S. economy. This work is being done under a cooperative program involving the periodic preparation of such information as part of an integrated system of national economic accounts. The first complete transactions table developed under this program was for 1958. It was published by the Department of Commerce in the September 1965 Survey of Current Business. The 1963 table will contain much more industry detail than the 1958 table, including ten agricultural industries compared with only two for 1958. An input-output transactions table shows, for each industry included, the value of output sold to other industries and to final consumers. Also shown are the value of purchases and the value added or gross product originating in each industry. The design of the table and the accounting concepts and conventions used in tracing the direct flow of goods and services throughout the economy makes it possible to use this information to measure direct and indirect relationships between each of the industries and final consuming sectors.

During the past year, additional detail from the 1958 Input-Output study was used to measure direct and indirect relationships between seventeen agricultural industries, nine food processing industries, more than eighty other intermediate industries, and the various final consumption categories, including personal consumption expenditures in total and separately for food, clothing, and tobacco. Such information provides a basis for determining the possible impact of alternative farm program adjustments on the various sectors of the economy.

The 1959 study of Wheat and the National Economy which was published in the August 29, 1960 Congressional Record was updated. In 1966 wheat in all of its phases from production through processing, storage, and distribution involved some 895,000 equivalent man-years of employment, or 1.2 percent of total civilian employment in the United States. The total included 137,000 man-years required in the production of wheat--96,000 on the farm and 41,000 in the supplying industries. Wheat processing involved about 353,000 man-years; and storage, transportation and distribution accounted for 397,000 man-years.

### 3. Editing a memorial volume of selected works of John M. Brewster.

A memorial volume of the late John M. Brewster's works has been completed and the book is being submitted to the University of Minnesota Press for publication. The book was edited by J. Patrick Madden and David Brewster.

### C. Analysis of the impact of alternative farm programs on agriculture and the general economy.

In response to a directive from Congress, a study of the parity income positions of commercial family farmers has been made. A committee of five university economists served as consultants to ERS for planning and carrying out this study. A "parity returns" concept was developed and is defined as the equivalent returns that labor and capital employed in farming might get if they were employed elsewhere in the economy. Statistical measurements of parity returns were developed for all farms combined, for several types of farm, and for size classes of farms as indicated by value of sales.

Several alternative standards for returns to resources used in farm production were developed and two were judged to be superior to the others. These were termed the "landlord standard" and the "stockholder standard." The basic concept underlying these parity returns standards is opportunity cost or alternative earnings capacity of the resources supplied by the farm operator and his family.

These parity returns standards were applied to 1959, 1964, and 1966 data and show that: (1) In 1966 farmers on the average earned 81 percent as much as they might have earned by renting out their land and accepting nonfarm employment. They earned 96 percent as much as they might expect by selling their land, investing in common stocks, and working elsewhere. In 1959 and 1964 the ratio of farm earnings to "parity returns" was lower than in 1966. (2) Farmers with over \$20,000 gross sales from farming averaged parity returns or more in 1966 under each of the methods used in comparison. (3) The smaller farmers (those with less than \$20,000 gross sales from farming) earned less than parity returns under all methods of comparison and in all years tested. (4) Farmers with less than \$5,000 gross sales earned only one-third to two-fifths of parity returns, even in 1966.

The application of the parity returns concept to different types of farms in different areas of the country was examined. Despite the variation found among different types of farms it appears that larger farms tend to have more favorable parity returns positions than smaller farms of the same type. Returns on farms that use large amounts of operator and family labor tend to be low relative to the calculated parity returns.

The report "Parity Returns Positions of Farmers," was submitted to Congress and was printed as Senate Document No. 44, 90th Congress, 1st Session, August 1967.



D. Centralization and maintenance of economic data pertaining to Agriculture.

Emphasis on the revitalization of rural America, significant changes in farm prices and income, and the transition in supply level for major agricultural products resulted in a large volume of requests for information and analyses during the reporting period. Officials planning inspection tours of rural development areas were provided basic data for specified counties. Tariff negotiations and import quotas stimulated numerous requests for import and export data, notably for feed grains, meat, and dairy products.

A table of daily market prices for specified important agricultural products is prepared and distributed to officials of the Department. Weekly prices for several agricultural products in the National Stockpile are compiled for official use.

Preparation and circulation of a looseleaf handbook providing current statistical information was continued. Distribution is made to approximately 130 policy makers in the Department and other high-ranking officials.

Charts, tables, and graphs are provided for use in publications or special reports. Major contributions of statistical data were made to the Economic Report of the President, Agricultural Statistics, the Statistical Abstract of the U. S., and the Congressional Committee print, Food Costs-Farm Prices. Data provided for non-governmental publications including the World Almanac, Readers Digest Almanac, Moody's Government Manual, and the Statesman's Yearbook.

Price series were developed for non-caloric sweeteners and glycerines during the year. A method was developed for estimating the parity ratio adjusted to take account of direct payments to farmers for current months.

## PUBLICATIONS--USDA

Current Estimates of Farm Income and Expenditures

The Farm Income Situation, published in November, February, April, and July in the reporting period, 11-75 pp.

Farm Income/State Estimates 1949-1966, A Supplement to the July 1967 Farm Income Situation. August 1967. 135 pp.

Research and Methods Relating to Farm Income

Parity Returns Position of Farmers. Senate Document No. 44, 90th Congress, First Session. 57 pp.

Wheat and the National Economy. Manuscript submitted to Senator Frank Carlson, September 1967. 10 pp.

## AREA NO. 4. ECONOMIC OUTLOOK, CONSUMPTION AND LONG-RUN PROJECTIONS

### PROBLEM

This area includes comprehensive analyses of changes in domestic and foreign economic activity, related agricultural policy, technological developments, and food consumption and nutrition. These analyses are concerned with the current economic situation and outlook, longer-run projections, and policy implications. They require the development of statistical data relating to the demand for farm products, domestic consumption trends, foreign trade, the supply-utilization balance for major farm products, farm prices and incomes, and general economic activity. Such data and the economic analyses based on them are essential to all concerned with the development and appraisal of policy and programs, and with changes in the production and marketing of farm products.

### USDA AND COOPERATIVE PROGRAM

The Department has a continuing long-term program designed to appraise the economic outlook, consumption of farm products, longer-run prospects for agriculture, and policy alternatives. The staff participating in this work consists of 9 professional man-years. The work is located in Washington, D.C. It includes (a) demand analysis and agricultural outlook, 2 professional man-years; (b) long-run agricultural projections, 2 professional man-years; and (c) supplies and utilization of food and other agricultural products, 5 professional man-years.

### PROGRAM OF STATE EXPERIMENT STATIONS

After World War II, several States made long-run projections studies but none has been reported in recent years. At least ten States are analyzing food expenditure and consumption data obtained through diaries maintained by household panels and through surveys. The total research effort in terms of man-years is not known.

### PROGRESS--USDA AND COOPERATIVE PROGRAMS

#### A. Demand analysis and agricultural outlook

The agricultural situation and outlook for 1967 was reported in the Demand and Price Situation in November 1966 and again in April 1967. The current agricultural and general economic situations were analyzed in February and August. Other statements on the general agricultural and business situations were released through the Farm Index, Agricultural Statistics, The Handbook of Agricultural Charts, radio broadcasts, presentations at regional and National outlook conferences, special articles, memoranda, and correspondence.

Numerous developments in the general economy were analyzed with respect to their affect on the demand and supply of farm products, prices received and paid by farmers, and the general agricultural situation and outlook. Appraisals were made of: (1) Changes in social security legislation and possible changes in income taxes, (2) increases in Federal and State and local Government spending due to the Viet Nam conflict and governmental programs, (3) the impact of excess inventories on production, (4) the recovery in residential construction activity, (5) the slowdown in additions and improvements to productive capacity, (6) changes in the balance of payments, (7) advances in technology, and (8) alternative farm policies. In addition, many analyses of short-term economic development related to the farm sector and to farm policy were made.

Statistical analyses and frameworks were further developed to explain changes in business conditions, employment, consumer income, and the demand for farm products. These analyses included alternative dynamic models which relate current demand, production, and investment to these same variables in previous periods. Investigations were also made using anticipatory data. Work was begun on developing quantitative tools for analyzing short-run developments in farm prices, output and income.

During the closing months of 1966, a random sample survey of subscribers to the Demand and Price Situation was conducted. The main purposes of this survey were to get a profile of the audience and to find how well the report met readers' needs. The sample consisted of around 50 percent of the mailing list of 5,819. The results indicated that around half of the readers used the Demand and Price Situation as a source of general information. Around one-fifth of the readers used the report as a guide to decision making, and a similar number used it as a data reference. The DPS appeared to be fulfilling its objective of providing a general wrap-up of the situation and outlook in agriculture and its interrelationship with the overall economy. Some interest was expressed in more information on the agricultural situation and outlook. Most respondents felt that general economy was treated adequately,

#### B. Long-run agricultural projections

An analysis of the long-run structure of the United States wheat sector was completed. A dynamic recursive model was used to make illustrative projections to 1980. A mimeograph report has been completed and publication of a technical bulletin is in progress.

Several analyses were made of the impact of alternative programs on farm production and income through 1972. The alternative programs analyzed included several levels of price support programs for wheat, feed grains and soybeans, and several export programs.



Work was begun on two projects dealing with the general long-run outlook for agriculture. (1) A reappraisal will be made of the intermediate outlook for agriculture to 1972 and a longer-run analysis for 1980. In this project, several alternative sets of farm programs will be considered, including a continuation of current programs, programs consisting of price supports only, and various levels of export assistance programs. (2) The other analysis will explore the capacity of U. S. agriculture to supply food aid from the viewpoint of (a) utilizing presently idle cropland, (b) bringing into production land with the capability of continuous and profitable agricultural use, and (c) the development of other land through irrigation and other land modification practices. The production response of agriculture to different levels of grain prices also will be analyzed and related to food aid programs and their relative costs.

### C. Supplies and utilization of food and other agricultural products.

The long-term program of measurement and appraisal of the supply and consumption of foods was continued. Per capita food consumption indexes on annual and quarterly bases were published for the major food products and for total food. The series were published in the National Food Situation, and in the 1965 Supplement to U. S. Food Consumption, Sources of Data and Trends, 1909-63. Food consumption trends and patterns, retail food price movements, changes in food expenditures, and foreign trade in food products were evaluated quarterly. Short-run outlook for these facets of food consumption were published in the National Food Situation. A new report, Consumption, Prices and Expenditures for Food, is in process. It will analyze long-term trends in demand for food through 1966.

Preparation of up-to-date supply and utilization tables for the major food products was continued. These tables provide the primary basis for calculation of per capita food consumption indexes and the index of supply and utilization of all farm commodities. Previously published tables were updated in the 1965 Supplement to U. S. Food Consumption, and dittoed supply and utilization tables for recent years were distributed quarterly within the Department to about 80 users. The internally distributed tables carried forecasts through 1967. The index of supply and utilization of farm commodities was calculated in detail; summary tables were published in the National Food Situation and Agricultural Statistics. A review of the basic methodology that underlies this set of index numbers was continued.

Forecasts of retail food prices received considerable emphasis this year. In addition to regularly published forecasts, special reports were made frequently at the request of Department officials. Additional resources were used in refining forecasting methods by the use of statistical models. More time was spent estimating and analyzing quarterly and regional per capita food consumption. Quarterly food consumption estimates for selected food products were published in the Supplement for 1965, U. S. Food Consumption.

The Division is participating in the project of the Southern Regional Technical Committee, SM-34, "Demand for Food." This committee is analyzing the demand for food by subregions within the southern States and by States and major regions outside the South. It is using results of panel surveys taken in Atlanta, Georgia, and Raleigh, North Carolina, and the 1965-66 Household Food Consumption Survey.

Analyses of prices, supplies and demands for sugar and other sweeteners and for coffee, tea, cocoa and other tropical products were continued, with results published in the National Food Situation.

## PUBLICATIONS--USDA AND COOPERATIVE PROGRAMS

Demand Analysis and Agricultural Outlook

Demand and Price Situation. Published quarterly.

Ahalt, J. D. and Layng, W. John. February 1967. Gross Product Originating in Agriculture, 1947-65. Demand and Price Situation, DPS-111, pp. 28-37.

Long-run Agricultural Projections

Mo, William Y. August 1967. A Dynamic Analysis of the United States Wheat Sector. Mimeograph, 86 pages.

Reutlinger, Shlomo. November 1966. Short-run Beef Supply Response. Journal of Farm Economics, Vol. 48, No. 4, Part 1.

Supplies and Utilization of Food and Other Agricultural Products

National Food Situation. Published quarterly.

Supplement for 1965 to U. S. Food Consumption, 1966. 30 pages.

Hiemstra, S. J. November 1966. Food Expenditures in 1965. National Food Situation, NFS-118, pp. 27-32.

Ainsworth, R. G. November 1966. Quarterly Consumption of Coffee. National Food Situation, NFS-118, pp. 40-41.

Friend, Berta. November 1966. Nutritional Review. National Food Situation, NFS-118, pp. 42-46.

Gray, F. D. February 1967. Quarterly Consumption of Caloric Sweeteners and Cocoa. National Food Situation, NFS-119, pp. 21-26.

Hiemstra, S. J., Eklund, H. M. and Modena, M. R. May 1967. Foreign Agricultural Trade. National Food Situation, NFS-120, pp. 28-31.

Matthews, J. L. May 1967. Forecasting the Quarterly Retail Food Price Index. National Food Situation, NFS-120, pp. 33-37.

Hiemstra, S. J. January 1967. Research Needs in Analysis of U. S. Food Demand. Marketing Section of the Association of Southern Agricultural Workers Conference. New Orleans, Louisiana.

Hiemstra, S. J. April 1967. Research Priorities in Measuring Market Performance. Paper presented at the seminar on Development of Improved Measures of Market Performance. ERS.

## AREA NO. 5. AGRICULTURAL HISTORY

## PROBLEM

Historical research on major developments in farming and major changes in policies, programs, and organization of the Department of Agriculture provides a background for understanding current agricultural problems, for developing governmental programs aimed at solving these problems, and for developing a wider understanding of the past achievements of agriculture and the Department. Historical studies have provided some of the basic information needed by the Secretary of Agriculture, advisory committees appointed by the Secretary of Agriculture, Executive Offices of the President, presidential commissions, and the Congress in formulating and evaluating agricultural programs and policies. The accuracy of the studies and the promptness with which needs have been met have contributed to the effective functioning of the Office of the Secretary and other policy-making offices and agencies.

## USDA AND COOPERATIVE PROGRAM

The Department has a continuing long-term program of historical research carried out by historians working in close cooperation with economists, statisticians, physical scientists, political scientists, sociologists, and others. The program involves both basic research and the application of the results of basic research to current problems.

The effort devoted to the project totals 6.2 professional man-years, including:

(a) work on the development of agriculture in the United States, which currently involves 1.7 professional man-years; and

(b) work on the history of USDA programs and organization, which involves 4.5 professional man-years.

## PROGRAM OF STATE EXPERIMENT STATIONS

The research effort of the State experiment stations in this area totals 2.0 scientist man-years.



## PROGRESS--USDA AND COOPERATIVE PROGRAMS

A. Development of agriculture in the United States

As the only office in the Federal Government conducting historical research on the development of American agriculture, the staff carries out numerous analyses of particular problems for the Administrator, the Office of the Secretary, other Government agencies, and research workers in the land-grant colleges and elsewhere. In some cases the analyses are published, but many are not.

Investigations of the relationships between economic conditions and major changes in agricultural technology continued on a limited scale. These included papers on the mechanization of tomato production and the effect of the American Revolution on agricultural development.

Some work continued in the preparation of a comprehensive analytic index or guide to source material on American agricultural history. Current work is concentrated on sources for the history of agriculture in California, the South, and the Great Plains. Two sections of the guide were issued in cooperation with the University of California. These covered agricultural science and technology and theses and dissertations prepared on aspects of agricultural history.

Basic research on the history of farm organizations continued during the year. Information on this topic was supplied to the Office of the Secretary and to scholars in land-grant institutions.

B. History of USDA programs and organization

Work on historical studies of agricultural policies and programs was emphasized during the past year and will continue to receive emphasis. A number of staff studies were prepared upon assignment from the Office of the Administrator and the Office of the Secretary. These included such topics as a documentary history of the technical assistance program for India, a history of Departmental programs relating to poverty, a series of papers on intergovernmental relations, and a review of the concept of a national agricultural relations act. Considerable time was devoted to service work in answering requests for historical information from Department and other Government officials, farm organizations, land-grant institutions and the public.

Research completed on the history of price support and adjustment programs was important in preparing several of the staff studies needed by the Office of the Secretary. During the year, a history of programs relating to the Great Plains was undertaken.

At the request of and in cooperation with the foreign analysis divisions of the Economic Research Service and the Foreign Agricultural Service, work is continuing on a comprehensive history of U. S. technical assistance programs in agriculture. Drafts of six chapters have been completed and circulated for comments. This study will continue as a major project during the coming year. An article derived from the study was published separately.

At the request of the Department's Office of Personnel, a history of personnel management in the Department has been undertaken. The project is significant outside the Department in that USDA personnel programs have influenced many other government agencies. Drafts of six chapters have been completed and circulated for comments.

## PUBLICATIONS--USDA AND COOPERATIVE PROGRAMS

- Nordin, Dennis S. July 1967. Graduate Studies in American Agricultural History [a bibliography]. Agricultural History. Vol. 41, pp. 275-312.
- Porter, Jane M. November 1966. A Century of Technical Assistance to Other Nations. Agricultural Development. No. 25, pp. 1-12.
- Pursell, Carroll W., Jr. and Rogers, Earl M. June 1966. A Preliminary List of References for the History of Agricultural Science and Technology in the United States, 46 pp.
- Rasmussen, Wayne D. January 1967. Technological Change in Western Sugar Beet Production. Agricultural History. Vol. 41, pp. 31-35.
- Rasmussen, Wayne D. and Wiser, Vivian. October 1966. Arlington--An Agricultural Experiment Farm in a Changing Era. Arlington Historical Magazine. Vol. 3, pp. 24-30.
- Wiser, Vivian and Rasmussen, Wayne D. December 1966. Background for Plenty: A National Center for Agricultural Research. Maryland Historical Magazine. Vol. 61, pp. 283-304.
- Economic Research Service, Agricultural History Branch. October 1966. Men and Milestones in American Agriculture. 89th Congress, 2d Session, House of Representatives, Committee on Agriculture. 59 pp.

## Work Unit Check List -- Reporting Year October 1, 1966 to September 30, 1967

Work Unit Number	Work Unit Titles	Work Locations During Past Year	Work Unit Incl. in	
			Summary of Progress (Yes-No)	Area and Subheading
ESA 1	Current Outlook and Situation Analysis for Agricultural Commodities			
ESA 1-1-54-00	Livestock and meat	Washington, D.C.	Yes	1-C
ESA 1-1-06-03	Livestock and meat	Denver, Colo.	Yes	1-C
ESA 1-2-54-00	Fats, oils and oilseeds	Washington, D.C.	Yes	1-F
ESA 1-3-54-00	Milk and manufactured dairy products	Washington, D.C.	Yes	1-D
ESA 1-4-54-00	Poultry and eggs	Washington, D.C.	Yes	1-E
ESA 1-5-54-00	Food grains	Washington, D.C.	Yes	1-A
ESA 1-6-54-00	Feed grains and other feeds	Washington, D.C.	Yes	1-B
ESA 1-7-54-00	Fruits and tree nuts	Washington, D.C.	Yes	1-G
ESA 1-8-54-00	Vegetables	Washington, D.C.	Yes	1-H
ESA 1-10-54-00	Cotton and synthetic fibers	Washington, D.C.	Yes	1-I
ESA 1-11-54-00	Animal fibers	Washington, D.C.	Yes	1-J
ESA 1-12-54-00	Tobacco and tobacco products	Washington, D.C.	Yes	1-K
ESA 2	Price, Supply, and Utilization Analysis for Farm Products			
ESA 2-1-54-00	Methodology and computation of price, supply and utilization analyses	Washington, D.C.	Yes	2-K
ESA 2-6-54-00	Consumption of textile fibers	Washington, D.C.	Yes	2-I
ESA 2-7-54-00	Price and utilization of cotton	Washington, D.C.	Yes	2-H
ESA 2-9-54-00	Price and supply of livestock and consumption of meat	Washington, D.C.	Yes	2-C
ESA 2-10-54-00	Price, supply and utilization of vegetables	Washington, D.C.	Yes	2-G
ESA 2-11-54-00	Price, supply and consumption of poultry and eggs	Washington, D.C.	Yes	2-D
ESA 2-12-54-00	Factors that affect the feed-livestock economy	Washington, D.C.	Yes	2-A,B
ESA 2-13-54-00	Supply, price and utilization of tobacco	Washington, D.C.	Yes	2-J
ESA 2-14-54-00	Price, production and utilization of milk and dairy products	Washington, D.C.	Yes	2-E
ESA 2-15-24-05	Price, production and utilization of soybeans and soybean products	Minneapolis, Minn.	No	



## Work United Check List -- Reporting Year October 1, 1966 to September 30, 1967 (Cont'd)

Work Unit Number	Work Unit Titles	Work Locations During Past Year	Work Unit Incl. in	
			Summary of Progress (Yes-No)	Area and Subheading
ESA 3	Measurement and analysis of farm income and expenditures	Washington, D.C.		
ESA 3-1-54-00	Current estimates of cash receipts, gross and net farm income, and related series	Washington, D.C.	Yes	3-A
ESA 4	Research and methods relating to farm income estimates	Washington, D.C.		
ESA 4-1-54-00	Income estimates analysis and development	Washington, D.C.	Yes	3-B-1,2,3
ESA 4-2-54-00	Quantitative relationships between agriculture and other sectors of the economy	Washington, D.C.	Yes	3-C
ESA 5	Statistical data services	Washington, D.C.		
ESA 5-1-54-00	Statistical services which include the centralization, maintenance, and analysis of basic economic data relating to agriculture	Washington, D.C.	Yes	3-D
ESA 6	Income and demand analysis as applied to agriculture and the agricultural outlook	Washington, D.C.		
ESA 6-1-54-00	Agricultural situation and outlook analysis including domestic and foreign demand, short-term and long-term improvements in data and techniques	Washington, D.C.	Yes	4-A
ESA 7	Long-run agricultural projections, analysis and research	Washington, D.C.		
ESA 7-1-54-00	Integrated long-run projections of supplies, utilization, prices and income for agriculture	Washington, D.C.	Yes	4-B
ESA 7-2-54-00	Analysis of the long-run implications of alternative farm programs	Washington, D.C.	Yes	4-B
ESA 7-3-54-00	Estimation and development of a long-run aggregate supply and demand structure for livestock, livestock products, feeds and other field crops	Washington, D.C.	Yes	4-B
ESA 8	Measurement and analysis of supplies and consumption of food and other agricultural products	Washington, D.C.		
ESA 8-1-54-00	Estimation and outlook analysis of food supplies, consumption, and prices	Washington, D.C.	Yes	4-C
ESA 8-2-54-00	Re-evaluation and improvement of indexes of supply-utilization of farm commodities	Washington, D.C.	Yes	4-C
ESA 8-3-54-00	Analysis of changes in the demand for food	Washington, D.C.	Yes	4-C
ESA 9	Agricultural History	Washington, D.C.		
ESA 9-1-54-00	Service work on the history of agriculture	Washington, D.C.	Yes	5-A
ESA 9-2-54-00	Documentation of Department policies, organization and administration	Washington, D.C.	Yes	5-B
ESA 9-3-54-00	History of production adjustment plans and programs	Washington, D.C.	Yes	5-B

